1/8

Fig. 1

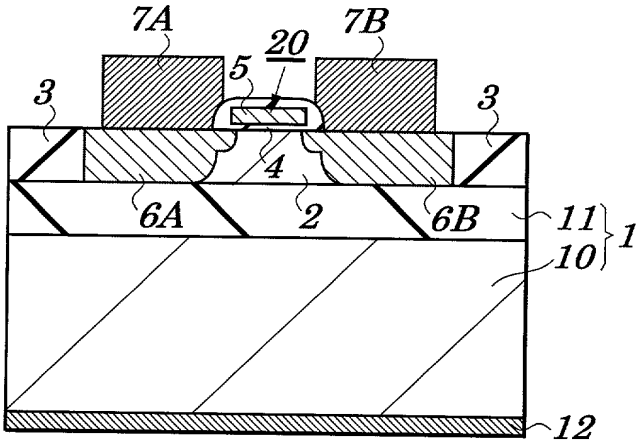


Fig. 2

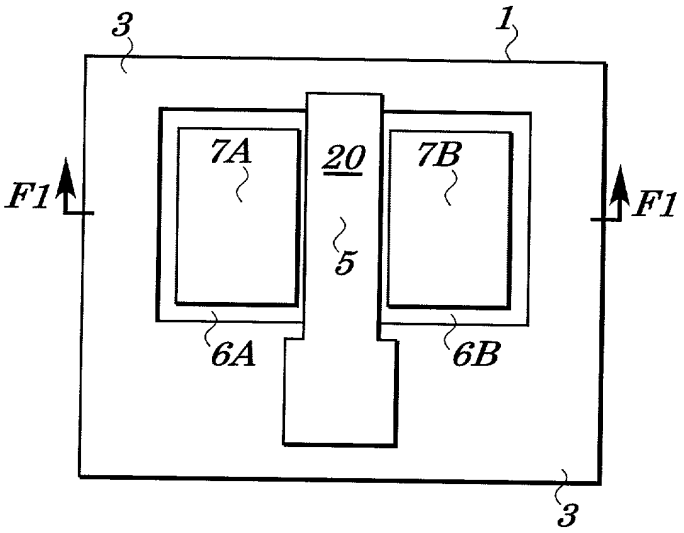


Fig. 3

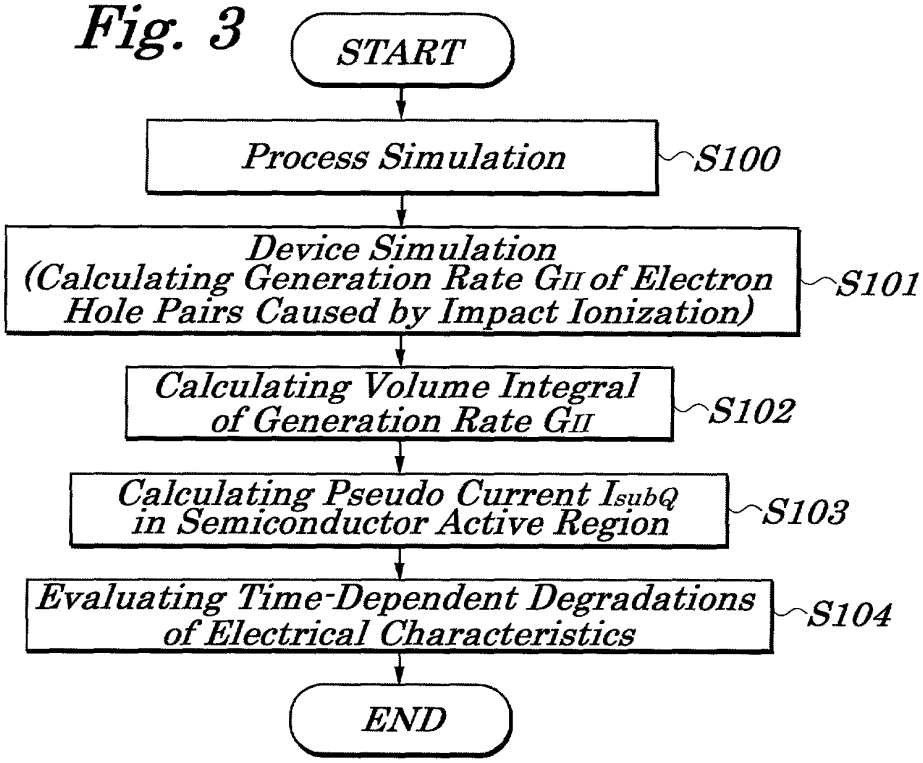
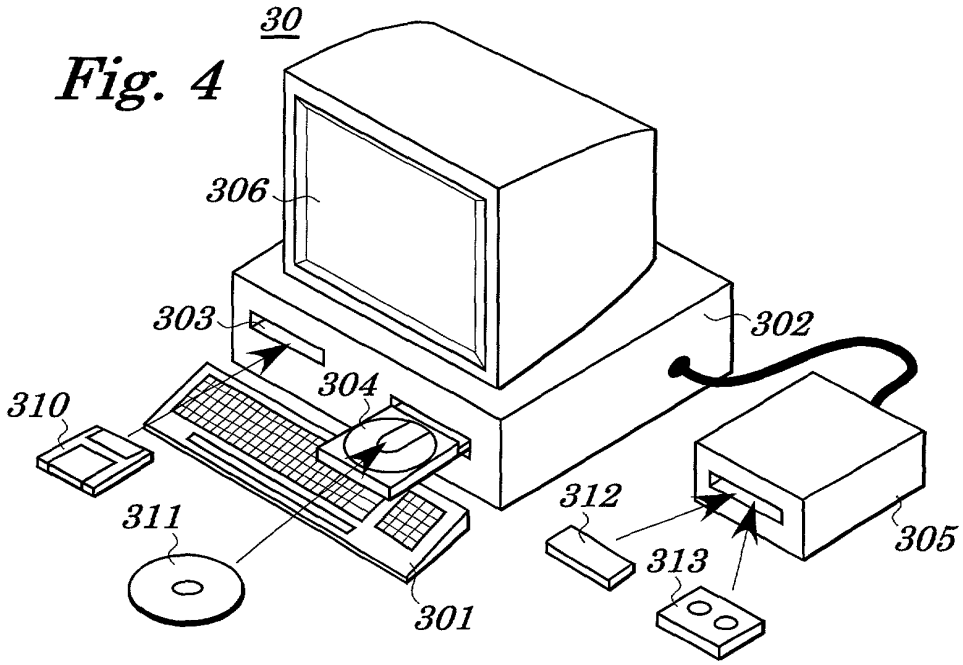

START
Process Simulation
S100
Device Simulation
(Calculating Generation Rate GII of Electron Hole Pairs Caused by Impact Ionization)
S101
Calculating Volume Integral of Generation Rate GII
S102
Calculating Pseudo Current IsubQ in Semiconductor Active Region
S103
Evaluating Time-Dependent Degradations of Electrical Characteristics
S104
END

Fig. 4


30
306
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311
312
313
305
301

Fig. 5

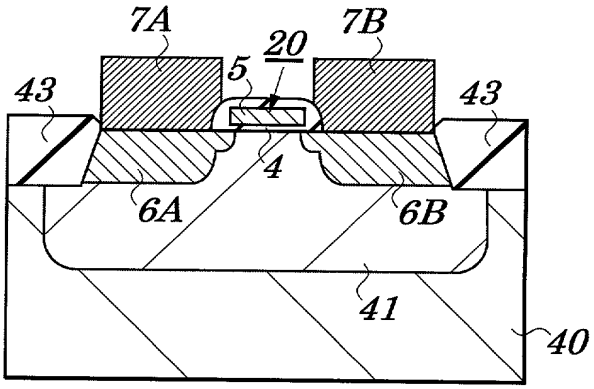


Fig. 6

I_{subQ}/Id_{ratio} \ Id[A]	0.0001	0.0002	0.0005	0.001	0.002
0.01	5.0E-08	1.3E-07	4.8E-07	1.3E-06	3.3E-06
0.02	7.5E-07	2.0E-06	7.1E-06	1.9E-05	5.0E-05
0.05	2.7E-05	7.0E-05	2.5E-04	6.7E-04	1.8E-03
0.1	4.0E-04	1.1E-03	3.8E-03	1.0E-02	2.6E-02
0.2	5.9E-03	1.6E-02	5.7E-02	1.5E-01	3.9E-01

Fig. 7

I_{subQ}/Id ratio \ Id[A]	0.0001	0.0002	0.0005	0.001	0.002
0.01	4.7E-08	1.3E-07	4.9E-07	1.2E-06	3.6E-06
0.02	7.0E-07	1.9E-06	7.3E-06	1.9E-05	5.3E-05
0.05	2.5E-05	6.7E-05	2.6E-04	6.6E-04	1.9E-03
0.1	3.7E-04	1.0E-03	4.0E-03	1.1E-02	2.5E-02
0.2	5.8E-03	1.5E-02	5.9E-02	1.4E-01	4.0E-01

Fig. 8

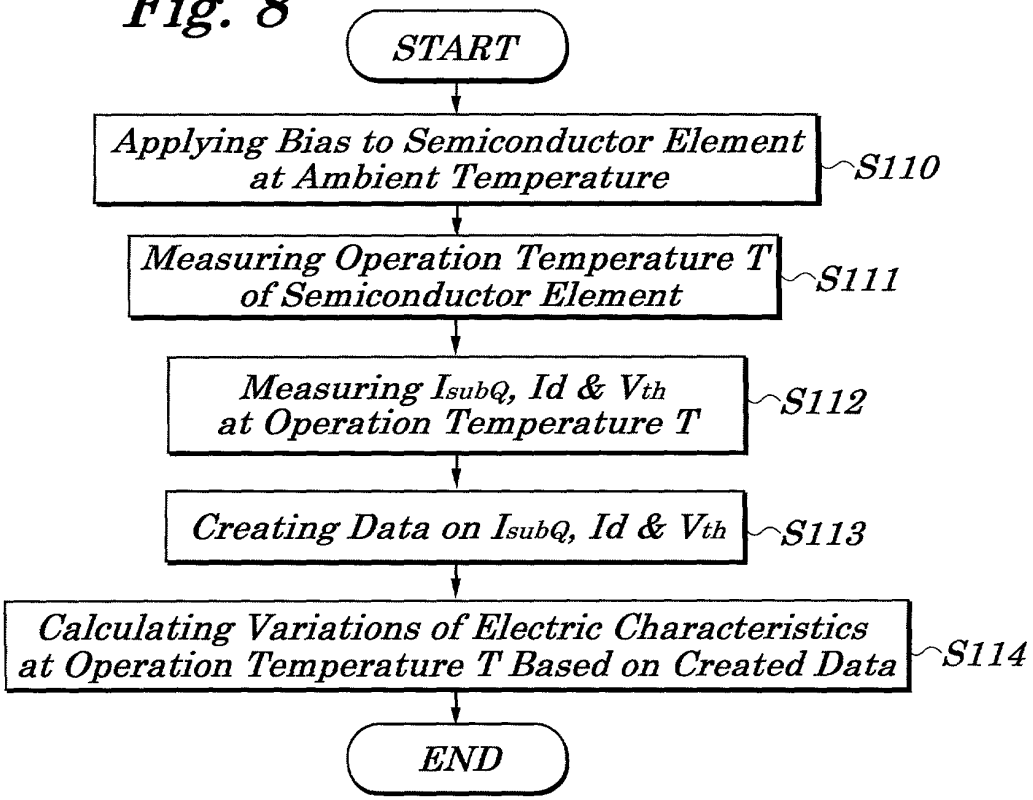


Fig. 9

I_{subQ}/Id ratio \ Id[A]	0.0001	0.0002	0.0005	0.001	0.002
0.01	8.4E-08	2.3E-07	8.8E-07	2.3E-06	5.5E-06
0.02	1.3E-06	3.4E-06	1.3E-05	3.4E-05	8.1E-05
0.05	4.5E-05	1.2E-04	4.7E-04	1.2E-03	2.9E-03
0.1	6.7E-04	1.7E-03	6.0E-03	1.6E-02	4.1E-02
0.2	9.8E-03	2.6E-02	9.0E-02	2.5E-01	6.6E-01

Fig. 10

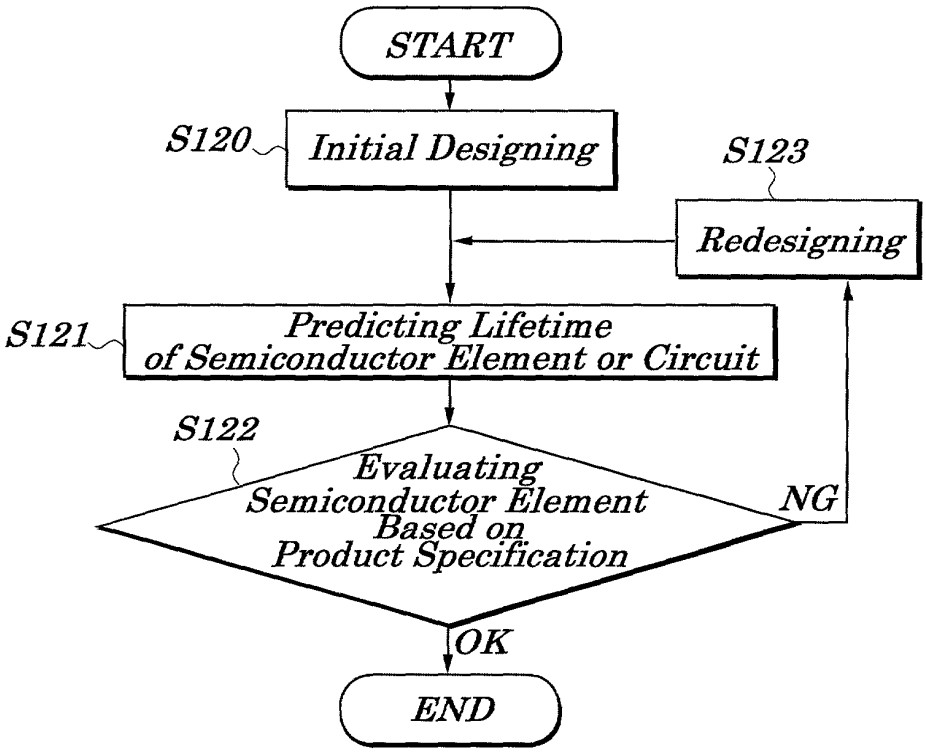
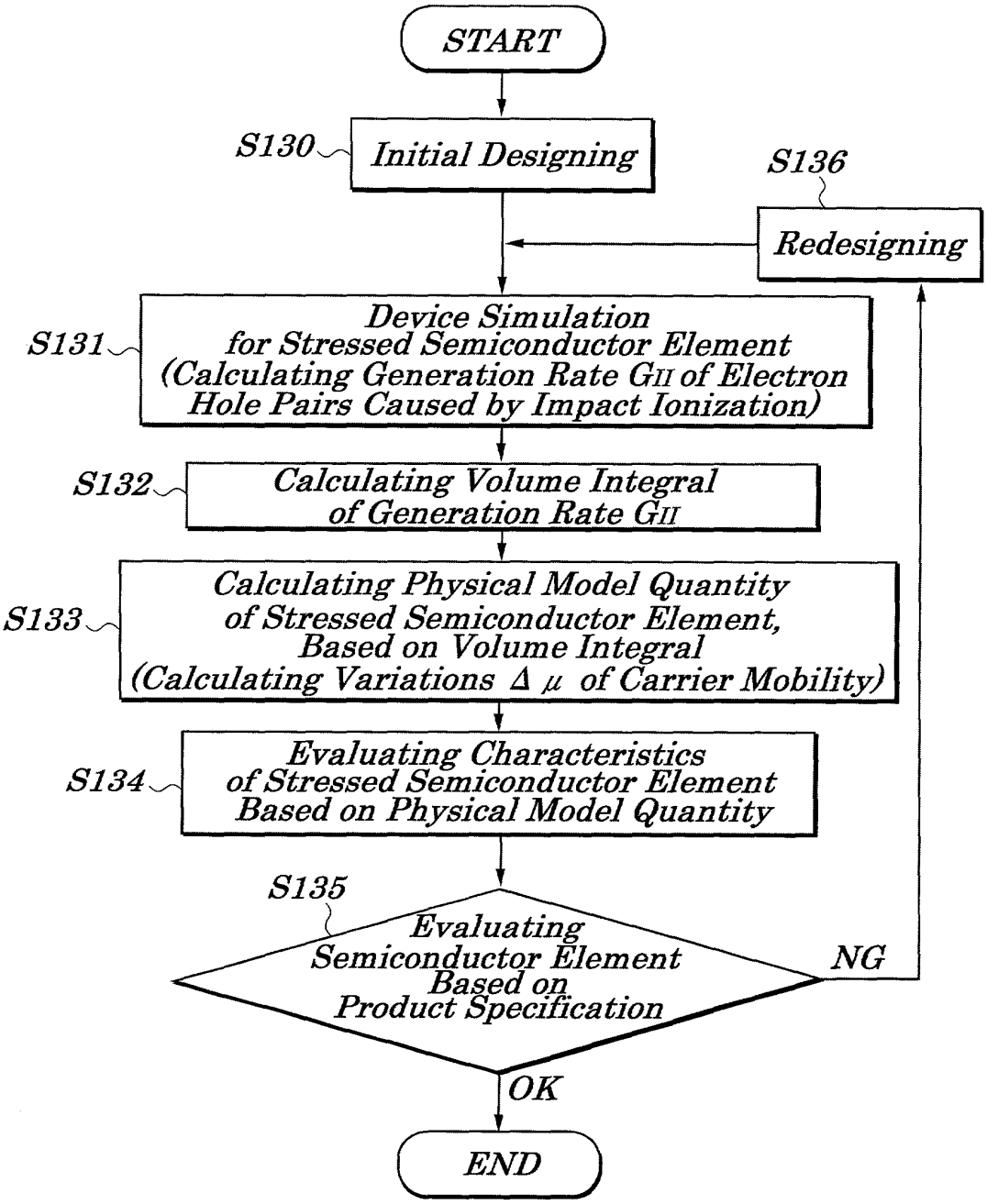


Fig. 11


START
S130
Initial Designing
S136
Redesigning
S131
Device Simulation for Stressed Semiconductor Element (Calculating Generation Rate GII of Electron Hole Pairs Caused by Impact Ionization)
S132
Calculating Volume Integral of Generation Rate GII
S133
Calculating Physical Model Quantity of Stressed Semiconductor Element, Based on Volume Integral (Calculating Variations Δμ of Carrier Mobility)
S134
Evaluating Characteristics of Stressed Semiconductor Element Based on Physical Model Quantity
S135
Evaluating Semiconductor Element Based on Product Specification
NG
OK
END

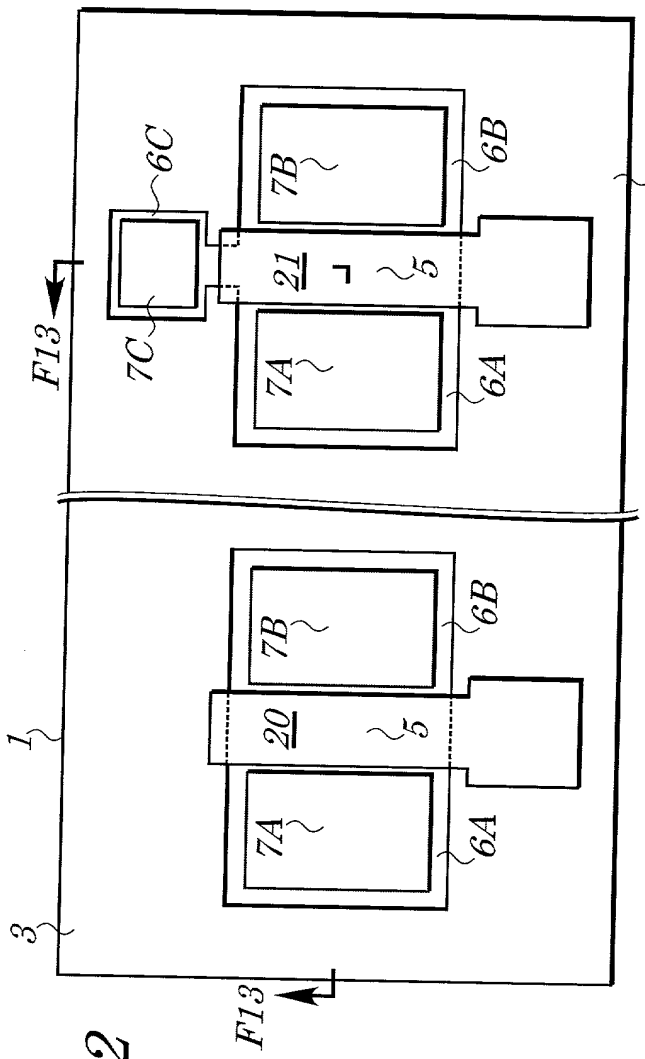

F13
6C
7B
6B
21
5
7C
7A
6A
1
3
20
F13

Fig. 12

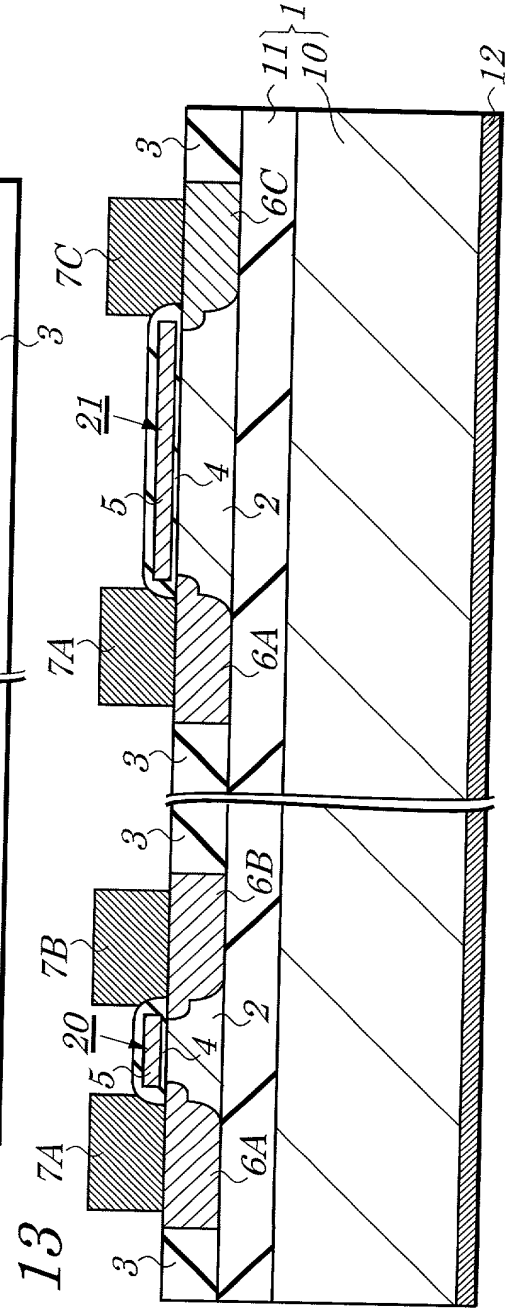

11
10
1
12
3
6C
7C
21
5
4
2
7A
6A
6B
7B
20

Fig. 13

Fig. 14